

Notice of Allowability

Application No.

10/681,261

Examiner

Joseph P. Martinez

Applicant(s)

NISHIMURA, TAKASHI

Art Unit

2873

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to 6-3-05.
2. ☒ The allowed claim(s) is/are 29,30,32-39,41-43 and 48.
3. ☒ The drawings filed on 29 June 2004 are accepted by the Examiner.
4. ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☒ All b) ☐ Some* c) ☐ None of the:
 1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

5. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
 6. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
 - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
7. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☒ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
3. ☐ Information Disclosure Statements (PTO-1449 or PTO/SB/08),
Paper No./Mail Date _____
4. ☐ Examiner's Comment Regarding Requirement for Deposit
of Biological Material
5. ☐ Notice of Informal Patent Application (PTO-152)
6. ☐ Interview Summary (PTO-413),
Paper No./Mail Date _____
7. ☐ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other _____

DETAILED ACTION

Allowable Subject Matter

Claims 29, 30, 32, 35, 37, 41 and 48 allowed.

The following is an examiner's statement of reasons for allowance: the prior art taken alone or in combination fails to anticipate or fairly suggest the limitations of the claims, in such a manner that a rejection under 35 USC 102 or 103 would be proper. The prior art fails to teach a combination of all the claimed features as presented in independent claims 29, 30, 32, 35, 37, 41 and 48.

Specifically regarding claim 29, Morimoto et al. (4850686) teaches the state of the art of a beam-emission-angle compensating optical unit for correcting a beam emission angle.

But, Morimoto et al. fails to explicitly teach the incident beam direction being shifted from the x-axis by the angle δ , which defines an angle δ_{yz} between the y-axis and an orthogonal projection component of the incident light beam in the yz plane; and wherein the optical element is disposed with its imaginary normal plane being located at a rotational angle φ from the xy plane around the x-axis, the rotational angle φ being equal to the angle δ_{yz} to allow the light emitting surface to output the output light beam in the output beam direction that is parallel with the x axis, as claimed.

Specifically regarding claim 30, Morimoto et al. (4850686) teaches the state of the art of a beam-emission-angle compensating optical unit for correcting a beam emission angle.

But, Morimoto et al. fails to explicitly teach the incident beam direction being shifted from the x-axis by the angle δ , which defines an angle δ_{yz} between the y-axis and an orthogonal projection component of the incident light beam in the yz plane; and wherein the optical element is disposed with its imaginary normal plane being located at a rotational angle φ from the xy plane around the x-axis, the rotational angle φ being equal to the angle δ_{yz} to allow the light emitting surface to output the output light beam in the output beam direction that is parallel with the x axis; a first light incident surface and a first light emitting surface forming an angle α_1 therebetween, the angle α_1 having a value substantially equal to $\delta_{xy}/(n-1)$, a second light incident surface and a second light emitting surface forming an angle α_2 therebetween, the angle α_2 having a value substantially equal to $\delta_{xz}/(n-1)$, as claimed.

Specifically regarding claim 32, Morimoto et al. (4850686) teaches the state of the art of a beam-emission-angle compensating optical unit for correcting a beam emission angle.

But, Morimoto et al. fails to explicitly teach the incident beam direction being defined by an angle γ_{1yz} formed between the z-axis and an orthogonal projection component of the incident light beam in the yz plane and by another angle γ_{1xz} formed between the z-axis and an orthogonal projection component of the incident light beam in

Art Unit: 2873

the xz plane; wherein the angle α satisfies inequalities: $-1 \leq \gamma_{1yz} / ((n-1) \alpha) \leq 1$ and $-1 \leq \gamma_{1xz} / ((n-1) \alpha) \leq 1$, wherein the holding unit orients the imaginary normal plane of the optical element to form a rotational angle ϕ from the yz plane around the z-axis, wherein the light emitting surface emits the output light beam with an angle β_{yz} defined between the z-axis and an orthogonal projection component of the output light beam in the yz plane and an angle β_{xz} defined between the z-axis and another orthogonal projection component of the output light beam in the xz plane, the angles β_{yz} and β_{xz} satisfying equations: $\beta_{yz} = (n - 1) \alpha * \cos\phi - \gamma_{1yz}$ and $\beta_{xz} = (n - 1) \alpha * \sin\phi - \gamma_{1xz}$, as claimed.

Specifically regarding claim 35, Morimoto et al. (4850686) teaches the state of the art of a beam-emission-angle compensating optical unit for correcting a beam emission angle.

But, Morimoto et al. fails to explicitly teach the incident beam direction being defined by an angle γ_{1yz} formed between the z-axis and an orthogonal projection component of the incident light beam in the yz plane and by another angle γ_{1xz} formed between the z-axis and an orthogonal projection component of the incident light beam in the xz plane; wherein the angle α satisfies inequalities: $-2 \leq \gamma_{1yz} / ((n-1) \alpha) \leq 2$ and $-2 \leq \gamma_{1xz} / ((n-1) \alpha) \leq 2$, wherein the first holding unit orients the imaginary normal plane of the optical element to form a rotational angle ϕ_1 from the yz plane around the z-axis, wherein the second holding unit orients the imaginary normal plane of the optical element to form a rotational angle ϕ_2 from the yz plane around the z-axis, wherein the light emitting surface emits the output light beam with an angle β_{yz} defined between the

Art Unit: 2873

z-axis and an orthogonal projection component of the output light beam in the yz plane and an angle β_{xz} defined between the z-axis and another orthogonal projection component of the output light beam in the xz plane, the angles β_{yz} and β_{xz} satisfying equations: $\beta_{yz} = (n - 1) \alpha * (\cos\phi_1 + \cos\phi_2) - \gamma_{yz}$ and $\beta_{xz} = (n - 1) \alpha * (\sin\phi_1 + \sin\phi_2) - \gamma_{xz}$, as claimed.

Specifically regarding claim 37, Morimoto et al. (4850686) teaches the state of the art of a beam-emission-angle compensating optical unit for correcting a beam emission angle.

But, Morimoto et al. fails to explicitly teach the incident beam direction being defined by an angle γ_{yz} formed between the z-axis and an orthogonal projection component of the incident light beam in the yz plane and by another angle γ_{xz} formed between the z-axis and an orthogonal projection component of the incident light beam in the xz plane; wherein the angle α satisfies inequalities: $0 \leq \gamma_{yz} / ((n-1) \alpha) \leq 2$ and $-1 \leq \gamma_{xz} / ((n-1) \alpha) \leq 1$, wherein the first holding unit orients the imaginary normal plane of the optical element to form a rotational angle ϕ_1 of a zero degree from the yz plane around the z-axis, wherein the second holding unit orients the imaginary normal plane of the optical element to form a rotational angle ϕ_2 from the yz plane around the z-axis, wherein the light emitting surface emits the output light beam with an angle β_{yz} defined between the z-axis and an orthogonal projection component of the output light beam in the yz plane and an angle β_{xz} defined between the z-axis and another orthogonal projection component of the output light beam in the xz plane, the angles β_{yz} and β_{xz}

Art Unit: 2873

satisfying equations: $\beta_{yz} = (n - 1) \alpha * (1 + \cos\phi_2) - \gamma_{yz}$ and $\beta_{xz} = (n - 1) \alpha * \sin\phi_2 - \gamma_{xz}$, as claimed.

Specifically regarding claim 41, Morimoto et al. (4850686) teaches the state of the art of a beam-emission-angle compensating optical unit for correcting a beam emission angle.

But, Morimoto et al. fails to explicitly teach the light incident surface and the light emitting surface define an imaginary normal plane, which is orthogonal to both the light incident surface and the light emitting surface and which extends along the reference axis, the incident light direction being shifted from the reference axis with an angle θ , the angle α having a value that substantially satisfies an equation $\alpha = \theta/(n-1)$ and that allows the output beam direction to be parallel with the reference axis.

Specifically regarding claim 48, Morimoto et al. (4850686) teaches the state of the art of a beam-emission-angle compensating optical unit for correcting a beam emission angle.

But, Morimoto et al. fails to explicitly teach the angle α satisfies inequalities: $-2 \leq \gamma_{yz} / ((n-1) \alpha) \leq 2$ and $-2 \leq \gamma_{xz} / ((n-1) \alpha) \leq 2$, wherein the first holding unit orients the imaginary normal plane of the optical element to form a rotational angle ϕ_1 from the yz plane around the z-axis, wherein the second holding unit orients the imaginary normal plane of the optical element to form a rotational angle ϕ_2 from the yz plane around the z-axis, wherein the light emitting surface emits the output light beam with an angle β_{yz}

Art Unit: 2873

defined between the z-axis and an orthogonal projection component of the output light beam in the yz plane and an angle β_{xz} defined between the z-axis and another orthogonal projection component of the output light beam in the xz plane, the angles β_{yz} and β_{xz} satisfying equations: $\beta_{yz} = (n - 1) \alpha * (\cos\phi_1 + \cos\phi_2) - \gamma_{lyz}$ and $\beta_{xz} = (n - 1) \alpha * (\sin\phi_1 + \sin\phi_2) - \gamma_{1xz}$, as claimed.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Joseph P. Martinez whose telephone number is 571-272-2335. The examiner can normally be reached on M-F 7:00 AM to 3:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Georgia Y. Epps can be reached on 571-272-2328. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Art Unit: 2873

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

JPM
6-9-05



Hung Xuan Dang
Primary Examiner